

## REMARKS

The Examiner has rejected Claims 1-51 under 35 U.S.C. 103 as being unpatentable over Ho et al. (WO 95/06298). The Examiner has taken the position that Ho teaches 1) dedicated hardware logic operable to perform lighting calculations and 2) user programmable hardware logic operable to perform additional shading calculations. The Examiner cites the Ho TransflectanceShader, page 16, line 24; page 18, lines 1-4, page 19, lines 3-8, as meeting the first element of the present invention. However, there is no teaching that the lighting calculations performed by the TransflectanceShader are in dedicated hardware as required by the claims of the present invention. This is an important feature of the present invention as it allows for the acceleration of selected shading calculations. Ho also illustrates past practices which allow for such calculations to be conducted only in software which thereby produces a much slower output. It should also be recognized there was no suggestion that Ho's shading approach could be implemented in hardware. Further, it should be recognized that Ho's object oriented approach could not be readily implemented in hardware even if that were suggested.

As to the second element of the present invention, the Examiner has taken the position that the user programmable hardware logic is disclosed in the Ho TImageMapShader and TProcedureMapShader. Again, these features are not disclosed as being practiced in hardware as required by the claims of the present invention. It bears repeating that this is an important aspect of the present invention because it allows for the acceleration of the calculations associated with determining the lighting for a particular scene.

Ho is further distinct because the "per-pixel" nature of the calculations makes the Ho approach probably unworkable in such an environment. In particular, as the Examiner will recognize, to calculate the lighting equations for a scene on a "per-pixel" basis requires a very fast methodology. As a result, Applicant's invention is directed a hardware acceleration invention which can accomplish such calculations efficiently and which was not disclosed or contemplated by Ho.

## SUMMARY

Pending Claims 1-51 are patentable. Applicant respectfully requests that the Examiner grant early allowance of this application. The Examiner is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,



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